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## ABSTRACT OF THE DISCLOSURE

A variance between sequential video pictures is extracted, and then, a GOP boundary position is decided based on inter-frame variance information. Furthermore, simple motion estimation is carried out with respect to video pictures inside one GOP. If a motion variation between the video pictures is large, a small predictive frame interval is taken; to the contrary, if the motion variation is small, a large predictive frame interval is taken. The simple motion estimation is carried out between two downscaled feature planes at a timewise fixed interval with respect to a video picture which is discriminated to be an interlaced video picture, wherein a motion compensatory prediction error at that time is output as image variance information.

If the image variance is small, coding is conducted by a frame structure; to the contrary, if the image variance is large, the coding is conducted by a field structure. With the above-described processing, it is possible to provide a video coding apparatus for deciding a GOP size and the predictive frame interval according to the feature of the input video picture, and another video coding apparatus for adaptively switching the coding by the frame/field structures according to the feature of the input video picture.